

This is the **Exhibit A** referred to in the Declaration under
37 C.F.R. Section 1.132 of ANTONY WILKS BURGESS
dated June 14, 2006.

January 2006

**TONY BURGESS
CURRICULUM VITAE**

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CURRICULUM VITAE

1. **NAME:** Antony Wilks BURGESS

DATE OF BIRTH: 13th March, 1946

CITIZENSHIP: Australian

2. **UNIVERSITY TRAINING:**

1967 B.Sc., University of Melbourne

1969 B.Sc.(Hons) 1st Class, Biochemistry
University of Melbourne

1972 Ph.D. Protein Chemistry, University of Melbourne

3. **POSITIONS HELD:**

1970-72 Postgraduate Research Scholar
Wool Sciences, CSIRO - Melbourne

1972-74 Research Fellow, Chemistry Department
Cornell University

1973-74 Research Fellow, Biophysics Department Weizmann
Institute, Rehovot, Israel

1975-77 Postdoctoral Research Fellow
Cancer Research Unit
The Walter & Eliza Hall Institute of Medical Research,
Melbourne

1977-79 Senior Research Officer
Head of Laboratory - Biological Regulators
The Walter & Eliza Hall Institute of Medical Research,
Melbourne

1980-Present Director, Melbourne Branch
Ludwig Institute for Cancer Research

1980-1982 Senior Associate, Department of Surgery
University of Melbourne

1980-1982	Honorary Principal Research Fellow The Walter & Eliza Hall Institute of Medical Research, Melbourne
1982-1988	Professorial Associate, Department of Surgery University of Melbourne
1988-Present	Professor of Cell Biology, Department of Surgery University of Melbourne

4. SCIENTIFIC APPOINTMENTS

1981-83	Scientific Advisor, Australian Academy of Science, Weizmann Institute Fund
1981-83	Scientific Advisor, Sydney Cancer Research Fund
1985-87	NH&MRC Regional Interviewing Committee
1985-96	Member, Medical & Scientific Committee, Anti Cancer Council of Victoria
1987-92	World Committee Member, Society for Research into Comparative Leukemia Associated Diseases
1988-02	Victor Hurley Fellowship & Keir Fellowship Committees, Royal Melbourne Hospital
1989-90	Chairperson, Planning Committee for Biomolecular Research Institute, Strategic Research Fund Victorian Chair of Anaesthesia Advisory Committee Research Committee, Peter MacCallum Cancer Institute
1990-01	Chairperson, Board of Biomolecular Research Institute
1993-97	Committee for the Tumour Biology Programme, International Union Against Cancer
1993-03	Founder & Member, Centre for Developmental Cancer Therapeutics (CDCT)
1993-98	Member, Organizing Committee, Australian Cancer Network
1994-00	Board Member, International Society of Differentiation
1995-00	Member, National Cancer Advisory Committee
1996-00	Chairperson, Scientific Committee, Victorian Breast Cancer Research Consortium
1996- 04	Management Committee, CRC for Cellular Growth Factors
1997-01	Executive Committee, Australian Society of Biochemistry and Molecular Biology
1998-02	Member, National Committee for Biochemistry, Australian Academy of Science
1998-00	President, Australian Society of Biochemistry & Molecular Biology, Inc.
2000-01	Visiting Professorial Fellow, Institute of Advanced Studies, Hebrew University
2001-02	Member, Scientific Advisory Committee, Bio21
2001-02	Member, Cancer Council of Victoria, Comprehensive Cancer Centre Working Party
2001-02	Member, Austin Research Redevelopment Reference Group
2001-03	Member, Austin Biomedical Alliance Research Committee
2001-present	Member, Scientific Committee, Victorian Breast Cancer Research Consortium
2002-present	Committee Member, Strategy Committee ONJCC

- 2003-2004 Board Director, Cancer Trials Australia
- 2003-present Member, CSIRO Sector Advisory Council
- 2003-present Board Member, Victorian Breast Cancer Research Consortium Inc.
- 2003-present Board Director, Bio21
- 2003-present Committee Member, Ministerial Cancer Taskforce

5. HONOURS AND AWARDS

- 1969 CSIRO Postgraduate Scholarship
- 1972 Australian American Education Foundation Travel Grant
- 1975 Queen Elizabeth II Postdoctoral Research Fellowship
- 1981 Gottschalk Medal, Australian Academy of Science
- 1993 Elected Fellow, Australian Academy of Science
- 1995 Amgen Prize
- 1998 Companion of the Order of Australia
- 1998 Elected Fellow, Asia-Pacific International Molecular Biology Network
- 1999 Medical Oncology Group/AMRAD Cancer Achievement Award
- 2003 Centenary Medal
- 2005 Leach Lecture Medal

6. POSTGRADUATE AND UNDERGRADUATE TEACHING INVOLVEMENT

- Successful supervision of 25 PhD students from 1980-2002
- Lecture courses to BSc., BScHons and MBBS students
- "Introduction to Bioinformatics Course" for undergraduates 1999-2002, Melbourne
- Gene Technology Access Centre Teachers Lecture Series, WEHI, Melbourne, 2002

7. CONFERENCE PRESENTATIONS (1998-2004)

1998

- Invited speaker: 17th UICC International Cancer Congress, Brazil
- Invited speaker: Kyowa Hakko Kogyo Symposium, Japan
- Invited speaker: ASBMB/ASPP Conference, Adelaide

1999

- Invited speaker: Leeds Castle Conference, Melbourne
- Invited speaker: LICR Signalling Meeting, New York, USA
- Invited speaker: MOG Mid-Year Meeting, Hamilton Island, Qld
- Invited speaker: ASBMB Combio 99, Queensland
- Invited speaker: Victor Chang Cardiac Research Institute Seminar, Sydney
- Invited speaker: Beijing Tumour Immunology Conference, China

2000

- Invited speaker: International Symposium on Tumor Immunology and Immunotherapy, Beijing
- Invited speaker: International Congress on Differentiation and Molecular Cell Biology, Queensland
- Invited speaker: Institute for Advanced Studies, Hebrew University of Jerusalem, Israel
- Invited speaker: 18th International Congress of Biochemistry & Molecular Biology, Birmingham, UK
- Invited speaker: Cornell University, New York, USA
- Invited speaker: Amgen Seminar, California, USA

2001

- Invited speaker: Royal Melbourne Hospital Familial Cancer Symposium, Melbourne
- Invited speaker: Yonsei University Protein Network Research Centre, Korea
- Invited speaker: Garvan Institute, Sydney
- Invited speaker: QIMR Scientific Symposium, Brisbane
- Invited speaker: 12th World Congress of Neurosurgery, Melbourne
- Invited speaker: Australian Society of Head & Neck Surgery, 2001, Melbourne
- Invited speaker: Australia-Korea Frontiers of Science and Technology and Bioinformatics Workshop, Melbourne University

2002

- Invited speaker: Beyond the Human Genome: the pharmaceutical industry in the new Millennium Symposium Melbourne
- Invited speaker: ErbB Symposium, Vanderbilt University, USA
- Invited speaker: Oncology Grand Round Talk, Austin Repatriation & Medical Hospital, Melbourne
- Invited speaker: Gene Technology Access Centre Teachers Lecture Series, WEHI, Melbourne
- Invited speaker: CSIRO Preclinical Forum, Melbourne
- Invited speaker: CRC-CGF Bioinformatics Course 2002, Melbourne
- Invited speaker: AGITG Annual Meeting, Hobart
- Invited speaker: Biophysical Chemistry in Health and Disease, Weizmann Institute of Science, Israel

2003

- Invited speaker: Annual Scientific Meeting, Australian New Zealand Breast Cancer Trials Group, Adelaide
- Invited speaker: 2nd Annual Symposium on Anti-Signaling Strategies in Human Neoplasia, Chicago, USA
- Invited speaker: Therapeutic Area Training: Bowel Cancer, Clinical Trials Victoria, Melbourne

2004

- Invited speaker: New Era for Gene Medicine Symposium, Institute of Medical Science, Tokyo, Japan
- Invited speaker: AACR 95th Annual Meeting, Orlando, Florida, USA
- Invited speaker: College of Surgeons Annual Scientific Congress Melbourne, Australia
- Invited speaker: ARI/LICR Joint Seminar Program, Austin Campus, Melbourne, Australia

Invited speaker: WEHI Postgraduate Seminar, WEHI, Melbourne, Australia

Invited speaker: Bioinformatics Lecture, LICR, Melbourne, Australia

Invited speaker: Brain Tumours Seminar, Dept of Surgery, Melbourne University

Invited speaker: HMRI Cancer Conference, Newcastle, Australia

Invited speaker: PNRC International Symposium on Proteomics and Cell Signaling, Yonsei University, Korea

Invited speaker: DHS Translational Research Seminar, Melbourne, Australia

Invited speaker: AH&MRC 2nd Congress, Darling Harbour, Sydney, Australia

2005

Invited speaker: Ludwig-PNRC Joint Symposium, Yonsei University, Korea

Invited speaker: ComBio2005, Adelaide, Australia

Invited speaker: Boden Research Conference 2005, Sydney, Australia

8. PEER REVIEW INVOLVEMENT

Editorial Boards

1981 – 1983 Experimental Hematology

1985-2001 Bio Essays, Board Member

1989-1990 Experimental Hematology, Board Member

1990- Growth Factors, Editor-in-Chief

1990- Journal of Experimental Therapeutics and Oncology

1998-2002 Journal of Cell Science, Board Member

2001- Encyclopedia of Hormones, Associate Editor,

Review Panels

Australian Research Council Expert Advisory Committee, Centre of Excellence

The Cancer Council (NSW) Fellowship Selection Committee

Scientific Peer Review, Foundation for Research Science & Technology, NZ

Selection Committee for appointment of Chief Health Science & Nutrition, CSIRO

ARC Federation Fellow Advisory Committee

Advisor, National Honours Secretariat Scientific Discipline Involvement

Strategic Advisor: Hanson Centre, Peter MacCallum, Monash University, Victorian Government Department of Innovation

Advisor: Amgen, Biogen, Schering Plough, Kirin

NH&MRC Peer Review Advisory Panel (2006+)

Reviewer for journals (average per year)

~20 articles per year - (J. Biol. Chem., Nature, Science, JACS, Exp. Cell Res., J. Cell Sci., Eur. J. Biochem.)

Grant Reviews (average per year)

1990 to 2000 ~150 per year. 2001 to 2003 ~75 per year

(NH&MRC, Cancer Council of Victoria, ARC, Charities, NIH, NZ Science Council)

9. ORGANISATION OF LOCAL, NATIONAL AND INTERNATIONAL MEETINGS

- 1988-1998 Founder & Member, Organising Committee, Lorne Cancer Conference, Lorne
- 1988-2003 Organizer Cancer Research Australia (CARA) database
- 1988 Organizer, Growth Factors and Cancer Meeting, Keystone
- 1999 Founder & Member of Organizing Committee, Australian Molecular Modelling Workshop (Annual Meeting)
- 2000-01 Member, Organising Committee, 11th International Conference on Second Messengers and Phosphoproteins, Melbourne
- 2001 Organiser Couran Cove Asia Pacific Molecular Biology Training Program Conference, Queensland
- 2003 Organising Committee International EGFR Collaboration Meeting, Melbourne

10. RESEARCH ACHIEVEMENTS

I am currently the Director of the Ludwig Institute for Cancer Research Melbourne and have held this position since 1980. I also hold the positions of Professor of Cell Biology in the Department of Surgery at the University of Melbourne and an Honorary Principal Research Fellow at The Walter and Eliza Hall Institute of Medical Research.

1970-1980

Between 1972 and 1974 I worked as a Research Fellow in the Chemistry Department at Cornell University and the Biophysics Department at the Weizmann Institute, Rehovot, Israel. My research was directed towards developing an understanding of the processes and molecular interactions determining the shapes and folding pathways of peptides and proteins. I helped to develop an algorithm to simulate the atomic forces that occur during peptide and protein folding and which eventually determine the three-dimensional coordinates of the equilibrium conformation (*Momany, F.A. et al [1975] Energy Parameters in Polypeptides 7. Geometric Parameters, Partial Atomic Charges, Nonbonded Interactions, Hydrogen-Bond Interactions, and Intrinsic Torsional Potentials for Naturally Occurring Amino-Acids. Journal of Physical Chemistry 79(22): 2361-2381, CIT: 1,390*). This initial work was on peptides and even smaller molecules and involved an analysis (identification) of the interactions critical for the conformational distribution. I developed a procedure to predict the alpha helical and beta sheet conformation of proteins. A new molecular representation was created to simulate intermolecular interactions more accurately; this representation assisted our understanding of both solid phase and solution conformations for small molecules. I concentrated on the formulation of the protein-folding problem and my work identified both the challenge and difficulties with simulation algorithms for these interactions. These studies were complemented by some experimental collaborations aimed at detecting the earliest events associated with protein unfolding and folding. These collaborations used photolysis to detect rapid changes in the surface of a protein during its folding. My final set of investigations involved the simplification of the force field to allow the calculations to be performed more quickly and thus more comprehensively for proteins and protein-polysaccharide interactions.

In 1975, I took up a Post-Doctoral Research Fellowship with the Cancer Research Unit at the Walter and Eliza Hall Institute of Medical Research in Melbourne. In 1977 I was made a Senior Research Fellow with the Walter and Eliza Hall Institute and in 1980 a Honorary Principal Research Fellow. Whilst there, I became the first person in the world to purify a

hormone which regulated blood cell production, G-CSF. This involved conventional protein chemistry techniques including chromatography (ion exchange, affinity and gel filtration) as well as preparative polyacrylamide gel electrophoresis and isoelectric focussing (*Burgess AW, et al [1977] Purification and properties of colony-stimulating factor from mouse-conditioned medium. Journal of Biological Chem 252:1998-2003, CIT: 530*). Together with Professor Donald Metcalf, I was involved in the discovery, characterization and isolation of G-CSF and several other new blood cell hormones (GM-CSF and multi-CSF, also called interleukin-3) (*Metcalf D, et al. [1978] Production of hemopoietic stimulating factors by pokeweed-mitogen-stimulated spleen cells. Transplantation Proceeding, 10:91-94; Nicola NA, et al. [1978] Preparation of colony stimulating factors from human placental conditioned medium. Leukaemia Research 2:313-322; Burgess A W, et al. [1980] Granulocytemacrophage-, megakaryocyte-, eosinophil- and erythroid-colony stimulating factors produced by mouse spleen cells. Biochemistry Journal, 185:301-314*). This work required the establishment of growth factor production systems and purification and characterization of minute amounts of protein.

1980-1990

In 1980 I moved to my current position as Director of the Ludwig Institute for Cancer Research. My early work at the Ludwig Institute (1980-1985) was directed towards the development of uses for the blood cell hormones GM-CSF and G-CSF (*Burgess AW and Metcalf D [1980] Characterization of a serum factor stimulating the differentiation of myelomonocytic leukemic cells. International Journal of Cancer, 26:647-654, CIT: 119*). At the same time I was involved in the initiation of a research program on colon cancer which focused on the biochemistry and biology of the epidermal growth factor family of proteins (*Burgess AW et al [1982] Two forms of murine epidermal growth factor; Rapid separation by using reversed phase HPLC. Proceedings of the National Academy of Sciences USA 79:5753-5757*). The availability of bacterial protein expression systems opened up new opportunities for the protein chemistry of growth factors. I co-ordinated the amino acid sequencing of GM-CSF (*Sparrow LG, et al [1985] Purification and partial amino acid sequence of asialo murine granulocyte-macrophage colony stimulating factor. Proceedings of the National Academy of Sciences USA 82:292-296*) which allowed the use of molecular biology techniques to help define the first recombinant clones of this growth factor (*Gough NM, et al [1984] Molecular cloning of cDNA encoding a murine haemopoietic growth regulator, granulocyte-macrophage colony stimulating factor. Nature 309:763-767*). The initial discovery and purification of GM-CSF led collaborators to produce recombinant human GM-CSF (*Metcalf D, et al [1986] In vitro actions on hemopoietic cells of recombinant murine GM-CSF purified after production in E. coli.. Comparison with purified native GM-CSF Journal of Cell Physiology 128:421-431*) for use in clinical testing.

The isolation of human GM-CSF from bacterial pellets led to new challenges and problems in protein extraction and folding, as well as high performance reversed phase chromatography (*Burgess AW, et al [1983] Murine epidermal growth factor. Heterogeneity on high resolution ion-exchange chromatography. EMBO Journal 2:2065-2069; Burgess AW, et al [1985] Purification of two forms of colony stimulating factor from mouse L-cell conditioned medium. Journal of Biological Chemistry 260: 16004-16011; Simpson RJ, [1985] Rat epidermal growth factor. Complete amino acid sequence: Homology with the corresponding murine and human proteins but truncated at both ends. European Journal of Biochemistry 153:629-637*). The initial clinical use of human GM-CSF revealed that this growth factor had a short

half-life in vivo (Cebon J, et al [1988] *Pharmacokinetics of human granulocyte-macrophage colony stimulating factor (hGM-CSF) using a sensitive immunoassay. Blood* 72:1340-1347). I helped to recognize the clinical potential of GM-CSF and established a clinical research team to develop both GM-CSF and G-CSF as therapeutic agents (Morstyn G, et al [1987] *Clinical potential of haemopoietic growth factors (colony stimulating factors) In: Pharmacology, W Rand and C Raper (Eds.) pp. 585-588; Lieschke, GJ, Burgess, A W (1992) Granulocyte colony-stimulating factor and granulocyte-macrophage colony-stimulating factor. N Eng J Med* 327:28-35).

In the late 1980's, I identified the first receptor for a blood cell growth factor (Walker F and Burgess AW [1985] *Specific binding of radioiodinated granulocyte macrophage colony stimulating factor to hemopoietic cells. EMBO Journal* 4:933-939) and discovered important interactions between the receptors for the blood cell growth factors. This work was reported in 1985 in (Walker F, et al [1985] *Hierarchical down-modulation of hemopoietic growth factor receptors. Cell* 43:269-276, CIT 316).

I was involved in the establishment of the three-dimensional structure of EGF in conjunction with colleagues at Cornell University (Montelione GT, et al [1986] *Identification of two anti-parallel β -sheet conformations in the solution structure of murine epidermal growth factor by proton magnetic resonance. 'Proceedings of the National Academy of Sciences USA* 83:8594-8598). The studies we conducted in the mid-eighties required EGF of the highest purity. Most of our studies had involved the use of native EGF extracted from mouse salivary glands, but the amounts we could produce and the structure of the molecules prevented us from initiating high resolution structural studies. This lead us to investigate recombinant procedures for synthesizing larger amounts of EGF (and its derivatives) as well as a related mitogen, transforming growth factor TGF α and the EGF receptor itself. We also investigated the physiology of epidermal growth factor members in the gastrointestinal tract (Malden, L. T., et al [1989] *Expression of Transforming Growth Factor-Alpha Messenger-Rna in the Normal and Neoplastic Gastrointestinal-Tract. International Journal of Cancer*, 43(3): 380-384, CIT: 130).

1990-2003 This phase of my work was directed towards colon cancer biology and the structure, function and signalling from the EGF receptor in normal and transformed cells.

We identified some of the growth factors and receptors which influence the production and differentiation of both normal and neoplastic cells. It was clear that fibroblast growth factors could induce the proliferation of both colonic cell lines and normal cells. My group undertook to determine the autocrine "growth factors" which were required for the proliferation of colonic carcinoma cells. As expected, transforming growth factor α (TGF- α) was a major regulator, but another autocrine factor was required for colonic cells to respond to TGF- α . We isolated this other protein and with mass-spectrometric identification, we identified laminin-10 as an essential autocrine factor required for colon carcinoma cells to proliferate *in vitro*.

During our characterization of colonic cell membranes, we had the opportunity to identify a specific intestinal cell surface protein called A33. This protein is a very useful marker for detecting metastatic colonic cells and the promoter sequences have been useful for developing colonic cell expression systems. Most recently we have concentrated on characterizing the

proteins associated with colon cancer: apc, ras and the EGF receptor system. We have determined that truncation of APC and oncogenic activation of ras is sufficient to produce colon cancer cells. We have developed several systems to study the biochemistry and biology of APC (see Research Plan) and will combine the knowledge gained from this research with our EGF receptor inhibitor antagonist program.

Together with my colleague Francesca Walker we identified an unusual super-agonist of EGF (a Val mutant) which uncovered an important aspect of mitogenic signalling, namely the degradation of the ligand receptor complex. My group has continued to contribute to the biochemistry and biology of the EGF/EGF receptor family, in particular to improving our understanding of the mechanisms of trans-modulation and the formation of the high-affinity state. We were one of the first groups to prove that autocrine TGF- α was responsible for the proliferation and survival of colon carcinoma cells.

Although we were able to improve our understanding of the 3-D structure of EGF our initial attempts to crystallize the EGF receptor were most frustrating. We focussed on the signalling events, the mechanism of activation of the EGF receptor. In the early 1990's TGF- α was presumed to be the mitogenic stimulus for the steady state production of epidermal and mucosal tissues such as the colon. I was involved in the characterization of a strain of knock-out mice, TGF- α $-/-$, and the waved-2 mouse which we determined had a naturally occurring defective variant of the EGF receptor kinase. These two mice changed our views of EGF receptor physiology and pathology, clearly the interactions between other EGF ligands and the other members of the EGF receptor family were able to compensate for many of the processes controlled by the EGF receptor.

Our signalling studies have directed attention to the multiple pathways stimulated by the EGF receptor. Combinations of signalling events in different cell types leads to distinct biological outcomes. The interaction between the EGF receptor and the integrin signalling systems is an area of major importance for the survival and progression of colon tumour cells. Now that we are moving towards a more comprehensive understanding of the individual biochemical lesions involved in carcinogenesis, it will be possible to suppress the proliferation of tumour cells with inhibitors of signalling pathways. Indeed with the appropriate combinations of inhibitors, it may even be possible to induce apoptosis in tumour cells.

It is an exciting phase of my research career to be contributing to the development of new anti-cancer therapeutics. Our most recent collaborative work with Colin Ward and Tom Garrett, the solving of the 3D structure for the EGF receptor extracellular domain:TGF- α complex and erbB2 has been a highlight (*Garrett, T.P. et al. [2002] Crystal Structure of a Truncated Epidermal Growth Factor Receptor Extravellular Domain Bound to Transforming Growth Factor α . Cell 110:763-773 & Garrett, T.P.J., et al [2003] The first 3 domains of ErbB2 ectodomain adopt a pseudo-active form of the receptor. Molecular Cell 11:495-505*). We have been involved with this collaboration for almost a decade and to see the structure, understand the ramifications that the structure has for the biology of the receptor and the potential for direct antagonist design are most exciting. We are using the opportunity to develop an opportunity for improving the therapy of colon cancer and gliomas.

In total I have authored or co-authored about 250 scientific papers in refereed journal. The majority of these have been in the field of cell biology and protein chemistry. I have also held a large number of office-bearing positions in my field of scientific expertise and in organizing expert teams on behalf of the biochemical community. It has been particularly exciting to see the successful development of several conferences and organisations I helped to form.

11. PUBLICATIONS:

1. BURGESS, A.W. (1972) Protein structure and enzyme mechanisms: Can quantum theory help? *Search*, 3:74-76.
2. BURGESS, A.W., Momany, F.A. and Scheraga, H.A. (1973). Conformational analysis of thyrotropin releasing factor. *Proc. Natl. Acad. Sci.*, 70:1456-1460.
3. BURGESS, A.W. and Scheraga, H.A. (1973) Stable conformations of dipeptides. *Biopolymers*, 12:2177-2183.
4. BURGESS, A.W. and Leach, S.J. (1973) An obligatory α -helical amino acid residue. *Biopolymers*, 12:2599-2605.
5. Scheraga, H.A., Lewis, P.N., Momany, F.A., Von Dreel, P.H., BURGESS, A.W. and Howard, J.C. (1973) Hairpin bends in oligopeptides and proteins. *Fed. Proc.*, 32:495.
6. BURGESS, A.W., and Leach, S.J. (1973) Conformational studies on alamethicin. *Biopolymers*, 12:2691-2712.
7. BURGESS, A.W., Ponnuswamy, P.K. and Scheraga, H.A. (1974) Analysis of conformations of amino acid residues and prediction of backbone topography in proteins. *Israel J. Chem.*, 12:239-286.
8. BURGESS, A.W., Paterson, Y. and Leach, S.J. Effects of methylation on the energetically preferred helical conformations of polypeptides. In: *Peptides, Polypeptides and Proteins*, E.R. Blout et al. (eds.), Academic Press, 1974, pp.79-88.
9. Shipman, L.L., BURGESS, A.W. and Scheraga, H.A. (1975) A new approach to empirical intermolecular and conformational potential energy functions. I. Description of model and derivation of parameters. *Proc. Natl. Acad. Sci.*, 72:543-547.
10. BURGESS, A.W., Shipman, L.L. and Scheraga, H.A. (1975) A new approach to empirical intermolecular and conformational potential energy functions. II. Applications to crystal packing, rotational barriers, and conformational analysis. *Proc. Natl. Acad. Sci.*, 72:854-858.
11. BURGESS, A.W. and Scheraga, H.A. (1975) Assessment of some problems associated with prediction of the three-dimensional structure of a protein from its amino acid sequence. *Proc. Natl. Acad. Sci.*, 72:1221-1225.

12. BURGESS, A.W. and Scheraga, H.A. (1975) A hypothesis for the pathway of the thermally-induced unfolding of bovine pancreatic ribonuclease. *J. Theor. Biol.*, 54:403-420.
13. BURGESS, A.W., Paterson, Y. and Leach, S.J. (1975) The random coil dimensions of methylated polypeptides. *J. Polymer. Sci.*, 49:75-83.
14. BURGESS, A.W., Weinstein, L.I., Gabel, D. and Scheraga, H.A. (1975) Immobilized carboxypeptidase A as a probe for studying the thermally induced unfolding of bovine pancreatic ribonuclease. *Biochem.*, 14:197-200.
15. BURGESS, A.W., Momany, F.A. and Scheraga, H.A. (1975) On the structure of thyrotropin releasing factor. *Biopolymers*, 14:2645-2647.
16. Momany, F.A., McGuire, R.F., BURGESS, A.W. and Scheraga, H.A. (1975) Energy parameters in polypeptides. VII. Geometric parameters, partial atomic charges, non-bonded interactions, hydrogen bonded interactions, and intrinsic torsional potentials for the naturally occurring amino acids. *J. Phys. Chem.*, 79:2361-2381.
17. BURGESS, A.W., Shipman, L.L., Nemanoff, R.A. and Scheraga, H.A. (1976) A new approach to empirical intermolecular and conformational potential energy functions. III. Application of EPEN to the conformation analysis of 1,2-disubstituted ethanes. *J. Amer. Chem. Soc.*, 98:23-29.
18. Shipman, L.L., BURGESS, A.W. and Scheraga, H.A. (1976) Lattice energies and heats of sublimation of O K for n-pentane, n-hexane, n-octane, and ammonia. *J. Phys. Chem.*, 80:52-54.
19. Pincus, M.R., BURGESS, A.W. and Scheraga, H.A. (1976) Conformational energy calculations of enzyme-substrate complexes of lysozyme. I. Energy minimization of monosaccharide and oligosaccharide inhibitors and substrates of lysozyme. *Biopolymers*, 15:2485-2521.
20. Matheson, R.R., Jr., Van Wart, H.E., BURGESS, A.W., Weinstein, L.I. and Scheraga, H.A. (1977) Study of protein topography with flash photolytically generated nonspecific surface-labeling reagents: Surface labeling of ribonuclease A. *Biochem.*, 16:396-403.
21. BURGESS, A.W. and Metcalf, D. (1977) Serum half-life and organ distribution of radiolabeled colony stimulating factor in mice. *Exp. Hematol.*, 5:456-464.
22. BURGESS, A.W., Wilson, E.M.A. and Metcalf, D. (1977) Stimulation by human placental conditioned medium of hemopoietic colony formation by human marrow cells. *Blood*, 49:573-583.
23. BURGESS, A.W., Camakaris, J. and Metcalf, D. (1977) Purification and properties of colony-stimulating factor from mouse lung-conditioned medium. *J. Biol. Chem.*, 252:1998-2003.

24. BURGESS, A.W. and Metcalf, D. Colony-stimulating factor and the differentiation of granulocytes and macrophages. In: "Experimental Hematology Today", S.J. Baum and G.D. Ledney (eds.), Springer-Verlag, N.Y. pp. 135-146, 1977.
25. BURGESS, A.W. and Metcalf, D. (1977) The effect of colony stimulating factor on the synthesis of ribonucleic acid by mouse bone marrow cells in vitro. *J. Cell. Physiol.*, 90:471-484.
26. Claesson, M.H., Whittingham, S., Rodger, M.B. and BURGESS, A.W. (1977) Colony growth of human T lymphocytes in agar: Effect of a soluble factor from adherent cells. *Eur. J. Immunol.*, 7:608-612.
27. Moore, M.A.S., BURGESS, A.W., Metcalf, D., McCulloch, E.A., Robinson, W.A., Dicke, K.A., Chervenick, P.A., Bull, J.M., Wu, A.M., Stanley, E.R., Goldman, J. and Testa, N. (1977) Report of a workshop on standardization of selective cultures for normal and leukaemic cells. *Br. J. Cancer*, 35:500-508.
28. Metcalf, D., Russell, S. and BURGESS, A.W. (1978) Production of hemopoietic stimulating factors by pokeweed-mitogen-stimulated spleen cells. *Transplantation Proceedings*, 10:91-94.
29. Swenson, M.K., BURGESS, A.W. and Scheraga, H.A. Conformational analysis of polypeptides: Application to homologous proteins. In: "Frontiers in Physicochemical Biology", B. Pullman (ed.), Academic Press, N.Y., 1978, pp. 115-142.
30. BURGESS, A.W., Metcalf, D. and Russell, S. Regulation of hematopoietic differentiation and proliferation by colony-stimulating factors. In: "Differentiation of Normal and Neoplastic Hematopoietic Cells", B. Clarkson (ed.), Cold Spring Harbor Laboratory, N.Y., pp. 339-357, 1978.
31. Johnson, G.R. and BURGESS, A.W. (1978) Molecular and biological properties of a macrophage colony-stimulating factor from mouse yolk sacs. *J. Cell. Biol.*, 77:35-47.
32. Dunfield, L.G., BURGESS, A.W. and Scheraga, H.A. (1978) Energy parameters in polypeptides. 8. Empirical potential energy algorithms for the conformational analysis of large molecules. *J. Phys. Chem.*, 82:2609-2616.
33. BURGESS, A.W., Metcalf, D., Nicola, N.A. and Russell, S.H.M. (1978) Purification and characterization of cell specific colony stimulating factors. In: "Hematopoietic Cell Differentiation", D.W. Golde et al. (eds.), Academic Press, New York, 10:399-416.
34. BURGESS, A.W., Metcalf, D. and Watt, S.M. (1978) Regulation of hemopoietic cell differentiation and proliferation. *J. Supramolec. Struct.*, 8:489-500.
35. Nicola, N.A., BURGESS, A.W., Metcalf, D. and Battye, F.L.. (1978) Separation of mouse bone marrow cells using wheat germ agglutinin affinity chromatography. *Aust. J. Exp. Biol. Med. Sci.*, 56:663-679.

36. Nicola, N.A., Metcalf, D., Johnson, G.R. and BURGESS, A.W. (1978) Preparation of colony stimulating factors from human placental conditioned medium. *Leukaemia Res.*, 2:313-322.
37. Tew, J.G., Mandel, T.E. and BURGESS, A.W. (1979) Retention of intact HSA for prolonged periods in the popliteal lymph nodes of specifically immunized mice. *Cell Immunol.*, 45:207-212.
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12. PATENTS

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Chimerized Cytokine Antibody

Applⁿs: US Application Serial Number 60/355,838; 13 Feb 2002

Crystal structure of erbB2

Applⁿs: Australian Prov 2002951853

Methods of screening based on EGF R crystal structure

Applⁿs: (AU) PR6827, PR6828, PS 2731; (USA) 60/335393, 60/336560 & 60/388171
WO 03014159

Anti-EGFR antibody

Applⁿs: WO 200292771

Truncated epidermal growth factor receptor

Applⁿs: WO 200200876; AU 200167156; EP 1200581

EGFR Model

Applⁿs: WO 9962955; EP 1082345; JP 2002517408
Granted: AU 753488

A33 Antigen

Applⁿs: WO 9708189; EP 85187; JP 11511973
Granted: US 5712369; AU 701105; US 6291235

POMC(76-103) Growth Factor

Applⁿs: WO 9523214; EP 785990; JP 9509573
Granted: US 5547940; AU 689560